

A NEW SPECIES OF *PTERYNOTUS*
(GASTROPODA : MURICIDAE)
FROM WESTERN AUSTRALIA

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Plate 39

SUMMARY

A new species, *Pterynotus (Pterochelus) westralis*, is described from the south-western continental shelf of Australia. The radulae of two other species of *Pterynotus* are described.

INTRODUCTION

Recent dredging and trawling operations undertaken by the Western Australian Museum off the southern half of the Western Australian coast have brought to light a number of new species, one of which, a species of *Pterynotus*, is described below.

TAXONOMY

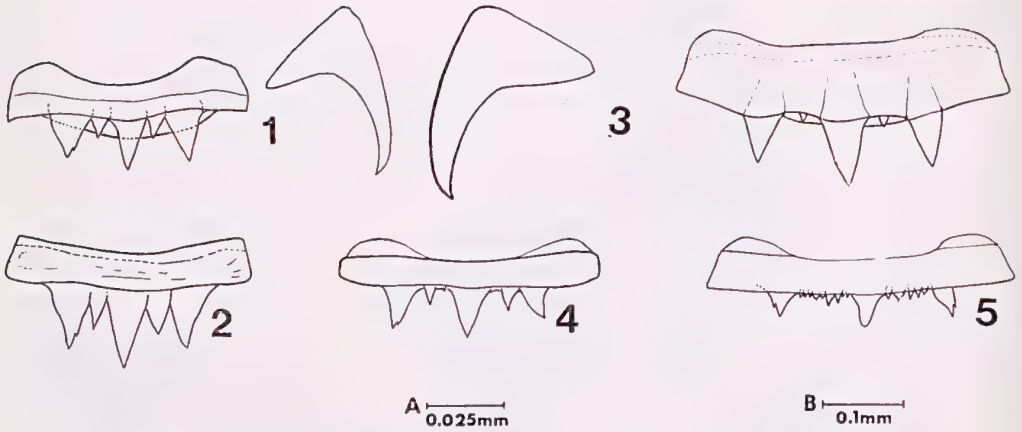
Family Muricidae

Genus *Pterynotus* Swainson, 1833.

Type species: (s.d. Swainson, 1833) *Murex pinnatus* Swainson, 1822 = *alatus* Röding, 1798.

Ponder (1972: 216) suggested that *Pterynotus* (s.s.) be retained for species without a posterior spine and having crisp, scabrose sculpture and a multispiral protoconch, whereas the subgenus *Pterochelus* has a posterior spine, does not develop the scabrose sculpture as intricately as in *Pterynotus* (s.s.) and has a paucispiral protoconch. The radulae of the species of these two groups are quite similar. The new species has shell characteristics of both of these groups. It has a rather weak posterior spine, intricate scabrose sculpture and a paucispiral protoconch. Thus the new species best fits *Pterochelus* and it would appear that scabrose sculpture can occur in both subgenera. It is quite probable that *Pterochelus* is not worthy of recognition even as a subgenus. The status of *Pterochelus* can only be more accurately assessed when the protoconchs of more species of *Pterynotus* (s.l.) are described.

The opportunity is taken to figure the radulae of two species of *Pterynotus* (s.s.) which were previously undescribed. These are: *Pterynotus (Pterynotus) bipinnatus* (Reeve, 1845), shown in Text Fig. 3, from Sandoval Point, Catanaun, Bondoc Peninsula, S. Quezon, Philippines (13°35' N, 122°



TEXT FIGURES. 1-5. Radular teeth.

1, 2. *Pterynotus (Pterochelus) westralis* sp. nov. (fig. 2 shows central tooth flattened).

3. *Pterynotus (Pterynotus) bipinnatus* (Reeve). Sandoval Point, S. Quezon, Philippines (WAM 132-72).

4, 5. *Pterynotus (Pterynotus) tripterus* (Born). Pala Point, S. Quezon, Philippines (WAM 112-72). Scale A: fig. 1, 2, 4, 5, Scale B: fig. 3.

16' E), under dead coral in 1.8 metres. Collected Western Australian Museum Luzon Expedition, 18 August 1965. W.A. Mus. reg. no. 132-72. *Pterynotus (Pterynotus) tripterus* (Born, 1778), shown in Text Figs. 4 and 5 from Pala Point, Catanaun, Bondoc Peninsula, S. Quezon, Philippines (13°34' N, 122°20' E). Collected Western Australian Museum Luzon Expedition, July-August, 1965. W.A. Mus. reg. no. 112-72.

The radulae of both these species are similar to those of *P. (Pterynotus) alatus* (Röding, 1798) and *P. (Pterochelus) acanthopterus* (Lamarck, 1816) (Ponder, 1972: text figs. 1 and 2 respectively) and to the new species described below. One of the specimens of *P. tripterus* (text fig. 5) shows a freak condition with several accessory denticles.

Subgenus *Pterochelus* Jousseau, 1880.

Type species: (o.d.) *Murex acanthopterus* Lamarck, 1816.

Pterynotus (Pterochelus) westralis sp. nov.

Plate 39, figures 1, 2. Text Figs. 1, 2.

Description. Shell: small, solid, with rather short spire and long anterior canal and short posterior spine. Protoconch yellow-brown to purple, rather large, of one whorl with tip slightly inrolled, terminated with a varix, smooth and shining. Teleoconch with up to 4 whorls, 3 varices on all whorls, arranged in almost straight lines. First 1½ whorls of teleoconch convex, smooth and shining, and like the protoconch whorls except for the presence of thin varices and a few very weak spirals. Later whorls angled, with wider varices bearing a short process at the shoulder which forms a spine, hardly protruding beyond the varices, on penultimate and body whorls. Spine thickened behind varix, not hollow but formed from an open channel which is filled in with minute axial lamellae. These lamellae over whole surface, especially well developed on front side of

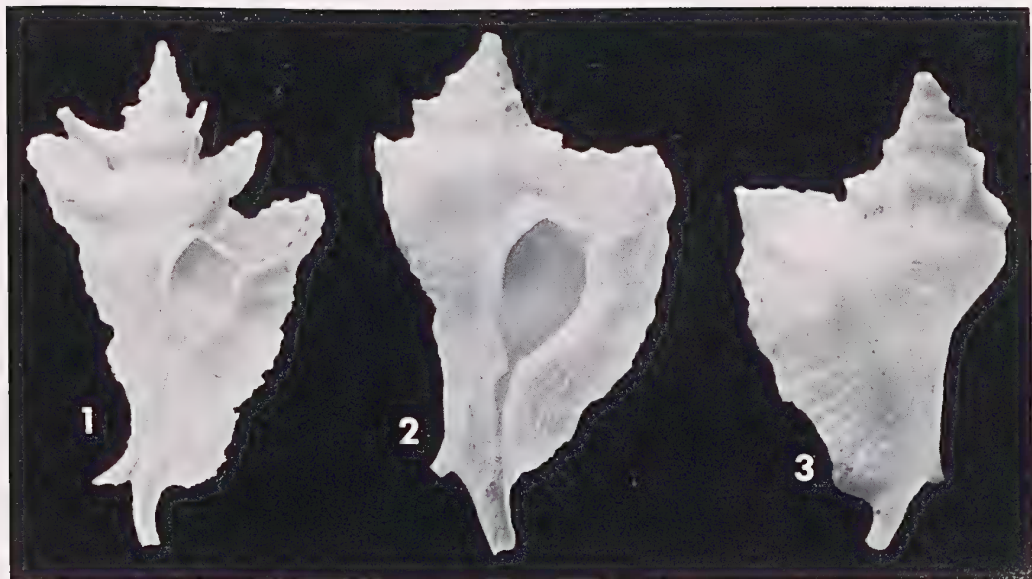


PLATE 39.

1. *Pterynotus (Pterochelus) acanthopterus* (Lamarck). N.W. of Rottnest Island, Western Australia in 146 metres.

2, 3. *Pterynotus (Pterochelus) westralis* sp. nov. 2. holotype, 3. paratype.

Figures not to same scale. For dimensions see Table 1.

varix; forming rows of scales between the spiral cords. Spirals weak, about 11 on penultimate whorl, peripheral spiral not noticeably stronger than others but runs into a prominent rib on the back of each varix which forms the posterior (shoulder) spine. Each varix formed from a thin lamella which is thickened and strengthened by the development of the axial lamellae on front surface, ultimately becoming rather thick and solid. Variceal flange extending from suture to about two thirds along the anterior canal as a slightly crenulated wing of almost equal width along its entire length. A single prominent rounded knob on shoulder between each pair of varices. Aperture moderately large, almost round, inner lip smooth, outer lip with about 6 weak denticles within and outer edge crenulate; both lips somewhat extended. Anterior canal slightly curved to right. Posterior canal short, V-shaped when varix mature, extended as variceal spine when varix immature, this forming a narrowly open groove. Color white or sometimes pale pink when fresh, the first few whorls purplish to brownish, anterior canal sometimes stained very pale brown.

Operculum: rather thin, pale yellow-brown, with terminal nucleus (obtained from specimen WAM. 169-72).

Radula: (Text Figs. 1, 2) central teeth broad, with 3 prominent cusps, the middle one the largest, between which lie short intermediate cusps. Lower part of base of each central tooth flanged laterally. A minute denticle on inside of one lateral cusp in the specimen examined is probably atypical. Lateral teeth simple, cusp narrow, slightly curved, base broad (obtained from specimen WAM. 169-72).

Dimensions: see Table 1.

Type series. Four specimens from one original lot dredged on L. F. B. "Bluefin" by B. R. Wilson, 14 August, 1962 viz: holotype in the W.A. Museum reg. no. 438-72; 2 paratypes in the W.A. Museum reg. nos. 439-72 and 440-72; 1 paratype in the Australian Museum, Sydney reg. no. C. 89039.
Type locality. 146 metres, NW of Rottneest Island, Western Australia, fine calcareous sand substrate.

Range and habitat. Off the central west coast of Western Australia from Point Cloates (lat. 22°52' S) to Bunbury (lat. 33°00' S), at depths from 115 to 221 metres. Fine calcareous sand substrate, usually with sponges and bryozoans.

Other material examined. (The number of specimens is indicated in parenthesis at the end of each record and the Western Australian Museum registered numbers precede each record): 170-72. 22°52' S, 112°29' E, W of Point Cloates, 6 Oct. 1963, 134m, DM 6/63, Stn. 178 (1); 176-72. 27°18' S, 113°16' E, NW of Bluff Point, 9 Oct. 1963, 99m, DM 6/63, Stn. 204 (1); 121-66. 27°40' S, 113°03' E, NW of Bluff Point, 22 Aug. 1963, 128m, DM 4/63, Stn. 131 (1); 120-66. 27°40' S, 112°03' E, NW of Bluff Point, 22 Aug. 1963, 128m, DM 4/63, Stn. 131 (1); 118-66. 29°05' S, 113°56' E, SW of Geraldton, 16 Feb. 1964, 130-148m, DM 1/64, Stn. 54 (1); 372/3-72. 29°15' S, 114°01' E, W of Dongara, 20 Mar. 1972, 139-146m, DM 1/72, Stn. 55 (2); 172-72. 30°00' S, 114°32' E, NW of Jurien Bay, 28 Jan. 1964, 128-137m, DM 1/64, Stn. 3 (1); 374/5-72. 30°37' S, 114°44' E, NW of Green I., 22 Mar. 1972, 146-139m, bottom temp. 19.71°C, DM 1/72, Stn. 68 (2); 376-72. 31°00' S, 114°52.5' E, W of Lancelin, 23 Mar. 1972, 146-150m, bottom temp. 19.12°C, DM 1/72, Stn. 70 (1); 377/8-72. 41°30'-34' S, 114°56' - 115°06' E, W of Guilderton, 23 Mar. 1972, 146m, bottom temp. 19.84°C, DM 1/72, Stn. 76 (2); N4353. NW of Rottneest I., 15 Aug. 1962, 155m, L. F. B. "Bluefin" (1); N4332. NW of Rottneest I., 14 Aug. 1962, 183-188m, L. F. B. "Bluefin" (1); 169-72. W of Westend, Rottneest I., 12 Aug. 1962, 139-144m, L. F. B. "Bluefin" (1); 379/80-72. 32°00' S, 115°15' E, W of Rottneest I., 23 Mar. 1972, 146-150m, bottom temp. 19.78°C, DM 1/72, Stn. 78 (2); 173-72. W of West End, Rottneest I., 16 Sept. 1965, 128m, L. F. B. "Bluefin" (2); 171-72. W of West End, Rottneest I., 16 Sept. 1965, 177-183m, L. F. B. "Bluefin" (1); 174-72. SW of Rottneest I., 7 Sept. 1965, 146-152m, L. F. B. "Bluefin" (1); 175-72. 33°00' S, 114°52' E, NW of Bunbury, 17 Feb. 1964, 115-123m, DM 1/64, Stn. 59 (1); 381-72. 33°00' S, 114°37' E, NW of Bunbury, 17 Mar. 1972, 219-221m, bottom temp. 14.57°C, DM 1/72, Stn. 6 (1).

Remarks. The new species occurs sympatrically with its relative *P. (P.) acanthopterus* along the outer part of the continental shelf of the central Western Australian coast but, unlike its congener, *P. (P.) westralis* is confined to this deeper zone. The two species have sometimes been collected together in the same dredge haul (e.g. WAM N4431 (*acanthopterus*) and WAM N4353 (*westralis*) dredged from 155 metres, N.W. of Rottneest Island).

Specimens of *P. (Pterochelus) acanthopterus* (plate 39, fig. 1) differ from *P. (P.) westralis* in having a much longer posterior spine, about twice the width of the variceal flange, thinner varices, a strong shoulder spiral

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rib and another somewhat prominent spiral rib on the upper base. All whorls are more distinctly shouldered in *acanthopterus* and all the varices bear distinct shoulder spines. The shell is also larger and lighter in weight and has a relatively taller spire. The anterior $\frac{1}{3}$ of the anterior canal is twisted dorsally and is not bent to the right. The scaly sculpture seen in the new species is much more indistinct in *acanthopterus* and the scales do not fill the posterior canal in *acanthopterus* as they do in *westralis*. The outer lip is crenulated in *acanthopterus* but does not form the denticles usually seen in *westralis*. The two species are thus readily distinguishable and *westralis* is very constant in nearly all its characters.

Murex (Pterynotus) exquisitus Sowerby (1904: 176) is similar to the new species. Sowerby's species was described from unknown habitat and has apparently not been dealt with in the literature since its introduction. It differs from the new species (as far as can be judged from the description and a photograph of the type obtained from the British Museum) in having a relatively smaller aperture, a straight anterior canal on which the varix is replaced by 4 spines and in having 2 brown bands. In most other respects the two species appear to agree closely.

ACKNOWLEDGMENTS

Dr. J. Taylor of the British Museum (Nat. Hist.) kindly supplied photographs of the type specimen of *Murex exquisitus* Sowerby. Mr. C. Turner of the Australian Museum produced the other photographs and Mrs. J. Ponder did the drawings of the radular teeth.

REFERENCES

- PONDER, W. F., 1972. Notes on some Australian genera and species of the family Muricidae (Neogastropoda). *J. Malac. Soc. Aust.*, 2 (3): 215-248.
- SOWERBY, G. B., 1904. Descriptions of six new species of marine Mollusca from the collection of the late Admiral Keppel. *Proc. Malac. Soc. Lond.*, 6 (3): 174-177.

Appendix

Locality data for measured *Pterynotus (Pterochelus) acanthopterus* in Table 1. All specimens in the Western Australian Museum. 67-66. NW of Rottnest I., W.A., 15 Sept. 1965, 146m; N4211. W of West End, Rottnest I., W.A., 12 Aug. 1962, 139-144m; 123-66. 28°14' S, 113°28' E, SW of Bluff Point, W.A., 4 Nov. 1964, 110m; 338-67. 11 Km. N of Long I., Onslow, W.A., 17 June 1960, 51m; 125-66. 29°49' S, 114°24' E, W of Dongara, W.A., 11 Oct. 1963, 128-132m.

TABLE 1. Comparison of shell dimensions of *P. (P.) westralis* and *P. (P.) acanthopterus*. (All specimens in the W.A. Museum).

P. (P.) westralis

Reg. No.	Height	Width	Height of aperture & canal	Length of posterior spine on last varix
438-72 (holotype)	28.02mm	15.40mm	18.62mm	6.05mm
439-72 (figured paratype)	25.00	14.56	16.94	6.24
172-72	31.29	18.40	20.25	6.93
120-66	27.00	16.87	18.60	7.27
N4332	30.26	18.36	19.76	7.10
173-72	28.21	16.86	18.30	6.68
169-72	27.30	15.05	18.24	5.85

P. (P.) acanthopterus

67-66 (figured specimen)	53.40	29.83	33.60	11.37
N4211	49.85	27.64	32.12	11.74
123-66	46.46	26.88	29.00	9.90
3388-67	29.50	21.50	19.25	10.13
125-66	32.87	19.50	20.90	8.62

(see Appendix)